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R307. Environmental Quality, Air Quality.

R307-343. Emissions Standards for Wood Furniture Manufacturing Operations.

R307-343-1. Purpose.

The purpose of R307-343 is to limit volatile organic compound (VOC) emissions from wood furniture manufacturing.

R307-343-2. Applicability.

R307-343 applies to wood furniture manufacturing operations, including related cleaning activities, that have the potential to emit 2.7 tons or more per year of VOCs and that are located in Box Elder, Cache, Davis, Salt Lake, Utah, Tooele, and Weber counties.

R307-343-3. Definitions.

The following additional definitions apply to R307-343:

"Affected source" means a wood furniture manufacturing source that meets the criteria in R307-343-2.

"As applied" means the volatile organic compound and solids content of the finishing material that is actually used for coating the substrate. It includes the contribution of materials used for in-house dilution of the finishing material.

"Coating" means a protective, decorative, or functional material applied in a thin layer to a surface. Such materials may include paints, topcoats, varnishes, sealers, stains, washcoats, basecoats, inks, and temporary protective coatings.

"Compliant coating" means a finishing material or strippable booth coating that meets the emission limits specified in R307-343-4(1).

"Control system" means the combination of capture and control devices used to reduce emissions to the atmosphere.

"Conventional Air Spray" means a spray coating method in which the coating is atomized by mixing it with compressed air at an air pressure greater than ten pounds per square inch (gauge) at the point of atomization. Airless, air assisted airless spray technologies, and electrostatic spray technology are not considered conventional air spray.

"Finishing material" means a coating used in the wood furniture industry, including basecoats, stains, washcoats, sealers, and topcoats.

"Finishing Operation" means those activities in which a finishing material is applied to a substrate and is subsequently air-dried, cured in an oven, or cured by radiation.

"Sealer" means a finishing material used to seal the pores of a wood substrate before additional coats of finishing material are applied. A washcoat used to optimize aesthetics is not a sealer.

"Solids" means the part of the coating that remains after the coating is dried or cured; solids content is determined using data from EPA Method 24.

"Stain" means any color coat having a solids content by weight of no more than 8.0% that is applied in single or multiple coats directly to the substrate, including nongrain raising stains, equalizer stains, sap stains, body stains, no-wipe stains, penetrating

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stains, and toners.

"Topcoat" means the last film-building finishing material applied in a finishing system. Non-permanent final finishes are not topcoats.

"Touch-up and Repair" means the application of finishing materials to cover minor finishing imperfections.

"Washcoat" means a transparent special purpose coating having a solids content by weight of 12.0% or less that is applied over initial stains to protect and control color and to stiffen the wood fibers in order to aid sanding.

"Washoff operations" means those operations in which organic solvent is used to remove coating from a substrate.

"Wood furniture" means any product made of wood, a wood product such as rattan or wicker, or an engineered wood product such as particleboard that is manufactured under any of the following standard industrial classification codes: 2434, 2511, 2512, 2517, 2519, 2521, 2531, 2541, 2599, or 5712.

"Wood furniture manufacturing operations" means the finishing, cleaning, and washoff operations associated with the production of wood furniture or wood furniture components.

R307-343-4. Emission Standards.

(1) Each affected source subject to R307-343 shall limit VOC emissions by:

(a) Using the compliant coating method as described in R307-343-4(1)(a)(i) or using the control system method as described in R307-343-4(1)(a)(ii).

(i) Compliant coating method is the use of the topcoats or topcoat/sealer combinations in Table 1:

TABLE 1

Compliant Coating VOC Limitations

(values in pounds VOC per pound of solids, minus water and exempt solvents (compounds not classified as VOC), as applied)

COATING CATEGORY	VOC [EMISSION RATES] <u>Content Limitations</u>	
	Effective Through December 31, 2014	Effective Beginning January 1, 2015
Topcoats	0.8	0.4
Topcoat/Sealer combination		
Topcoat	1.8	0.9
Sealer	1.9	0.9
Acid-cured, alkyd amino topcoat/sealer combinations		

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Acid-cured,alkyd amino topcoat	2.0	1.0
Acid-cured,alkyd amino vinyl Sealer	2.3	1.2

(ii) Control system method is the use of a VOC control system achieving a 90% or greater emissions reduction.

(b) Using strippable spray booth coatings that contain no greater than 0.8 pounds VOC per pound solids as applied.

(c) Using closed containers for the storing of finishing, gluing, cleaning and washoff materials.

R307-343-5. Application Equipment Requirements.

(1) All coatings shall be applied using equipment having a minimum 65% transfer efficiency, except as allowed under R307-343-5(3) and operated according to the equipment manufacturer specifications. Equipment meeting the transfer efficiency requirement includes~~[, but is not limited to]~~:

- (a) Brush, dip, or roll coating;
- (b) Electrostatic application; and
- (c) High volume, low pressure (HVLP) spray equipment.

(2) Other coating application methods that achieve ~~[emission reductions]~~transfer efficiency equivalent to HVLP or electrostatic spray application methods may be used.

(3) Conventional air spray methods may be used under the following circumstances:

(a) To apply finishing materials that have no greater than 1.0 pound of VOC per pound of solids, as applied;

(b) For touch-up and repair under the following circumstances:

(i) The touchup and repair occurs after completion of the finishing operation; or

(ii) The touchup and repair occurs after the application of stain and before the application of any other type of finishing material, and the materials used for touchup and repair are applied from a container that has a volume of no more than 2.0 gallons;

(c) When the spray gun is aimed and triggered automatically, not manually;

(d) When the emissions from the finishing application station are directed to a control device;

(e) When the conventional air gun is used to apply finishing materials and the cumulative total usage of that finishing material is no more than 10% of the total gallons of finishing material used during the calendar year; or

(f) When the conventional air gun is used to apply stain on a part for which it is technically or economically infeasible to use any other spray application technology. The following criteria shall be used, either independently or in combination, to support the affected source's claim of technical or economic infeasibility:

(i) The production speed is too high or the part shape is too complex for one operator to coat the part and the application station is not large enough to accommodate an additional operator; or

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(ii) The excessively large vertical spray area of the part makes it difficult to avoid sagging or runs in the stain.

R307-343-6. Control Systems Operations.

(1) Emission control systems shall be operated and maintained in accordance with the manufacturer recommendations in order to maintain 90% or greater continuous emission reduction~~[of 90%]~~.

(2) The owner or operator of a control device shall provide documentation that the emission control system will attain the requirements of R307-343-4 and R307-343-5.

(3) The owner or operator shall maintain for a minimum of two years records of operating and maintenance sufficient to demonstrate that the equipment is being operated and maintained in accordance with the manufacturer recommendations.

R307-343-7. Work Practices and Recordkeeping.

(1) Control techniques and work practices shall be implemented at all times to reduce VOC emissions from fugitive type sources. Control techniques and work practices shall include~~[, but are not limited to]~~:

(a) Storing all VOC-containing coatings, thinners, and coating-related waste materials in closed containers;

(b) Ensuring that mixing and storage containers used for VOC-containing coatings, thinners, and coating-related waste material are kept closed at all times except when depositing or removing these materials;

(c) Minimizing spills of VOC-containing coatings, thinners, and coating-related waste materials; and

(d) Conveying VOC-containing coatings, thinners, and coating-related waste materials from one location to another in closed containers or pipes.

(2) The work practices for cleaning materials shall be implemented at all times to reduce VOC emissions from fugitive type sources. The work practices shall include~~[, but are not limited to]~~:

(a) Storing all VOC-containing cleaning materials and used shop towels in closed containers;

(b) Ensuring that storage containers used for VOC-containing cleaning materials are kept closed at all times except when depositing or removing these materials;

(c) Minimizing spills of VOC-containing cleaning materials;

(d) Conveying VOC-containing cleaning materials from one location to another in closed containers or pipes; and

(e) Minimizing VOC emissions from cleaning of application, storage, mixing, and conveying equipment by ensuring that equipment cleaning is performed without atomizing the cleaning solvent and all spent solvent is captured in closed containers.

(3) All persons shall perform solvent cleaning operations with cleaning material having VOC content of 0.21 pounds per gallon or less.

(4) For each calendar year, [A]all sources subject to R307-343 shall maintain records demonstrating compliance with all provisions of R307-343~~[on an annual basis]~~.

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(a) Records shall include, but shall not be limited to, inventory and product data sheets for all coatings and solvents subject to R307-343.

(b) These records shall be made available to the director upon request.

R307-343-8. Compliance Schedule.

(1) Sources in Salt Lake and Davis counties that have the potential to emit between 2.7 ~~[or more tons but less than]~~ and [25]24 tons of VOC per year shall be in compliance by September 1, 2013.

(2) Sources in Salt Lake and Davis counties that have the potential to emit 25 tons or more of VOC per year shall be in compliance upon the effective date of this rule.

(3) All sources in Box Elder, Cache, Tooele, Utah and Weber counties shall be in compliance with this rule by January 1, 2014.

KEY: air pollution, wood furniture, coatings

Date of Enactment or Last Substantive Amendment: 2013

Notice of Continuation: February 1, 2013

Authorizing, and Implemented or Interpreted Law: 19-2-104(1)(a); 19-2-104(3)(e)